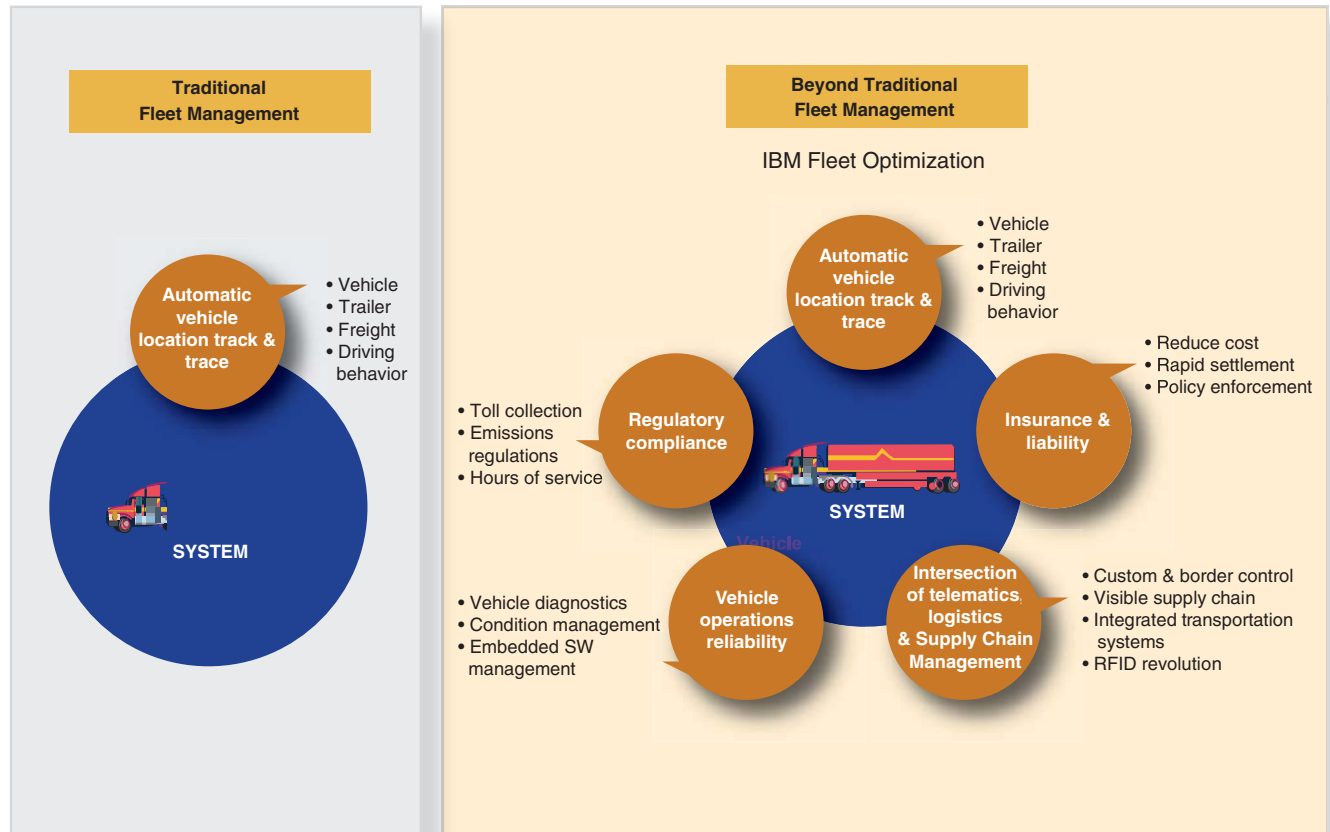# Fleet optimization solutions
for the Travel and Transportation Industry

Fleet optimization ...

- *Know the locations of tractors, trailers, containers and other fleet assets at all times*
- *Reduce unscheduled maintenance costs*
- *Lower fuel expenses*
- *Greatly improve driver productivity and safety*
- *Increase customer satisfaction significantly*
- *Monitor the condition of cargo to prevent loss and potential spoilage*
- *Recover lost assets and prevent fraud*
- *Mitigate risks to reduce insurance costs*

Traditional Fleet Management

Automatic vehicle location track & trace
- Vehicle
- Trailer
- Freight
- Driving behavior

SYSTEM

Beyond Traditional Fleet Management

IBM Fleet Optimization

Automatic vehicle location track & trace
- Vehicle
- Trailer
- Freight
- Driving behavior

Insurance & liability
- Reduce cost
- Rapid settlement
- Policy enforcement

Regulatory compliance
- Toll collection
- Emissions regulations
- Hours of service

Vehicle operations reliability
- Vehicle diagnostics
- Condition management
- Embedded SW management

Intersection of telematics, logistics & Supply Chain Management
- Custom & border control
- Visible supply chain
- Integrated transportation systems
- RFID revolution

SYSTEM

In the early days of fleet management, transportation companies were largely in the dark with regards to the exact whereabouts of their assets. This was true not only when those assets were in service but also when they were simply parked in a large lot and not immediately visible to the equipment management team. Companies relied on physical inventories and the conscientiousness of their fleet operators for reliable fleet data.

Enter fleet management solutions

Early fleet management solutions typically employed a locator unit in the truck with a radio link back to company headquarters. Now, at least, the company knew the general location of the assets in the fleet. As these technologies evolved, their precision increased and the size and costs associated with the solution decreased.

The overall result was better fleet management which, in turn, led to greater efficiencies and reduced costs.

Fleet optimization

IBM now offers the next step in fleet management for transportation carriers and other owners of truck and auto fleets. This step – and it is a significant advance – is called *fleet optimization*.

IBM fleet optimization solutions go beyond simple information about the location of a fleet asset. These solutions offer a wealth of business analytics that integrate the location and condition of a vehicle or truck and its cargo into a company's Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), Supply Chain Management (SCM), and billing systems. This enriched knowledge, in turn, leads to even greater efficiencies and savings.

An IBM fleet optimization solution can include the following features:

Fleet reporting for vehicle, trailer, freight and driver. Global positioning (GPS) technology delivers exact knowledge of the location of key assets at any time. This information enhances the performance of dispatchers, work schedulers, maintenance personnel, and those responsible for security and logistics. GPS also enables mapping for greater efficiency and the possibility of geo-fence alerts that indicate when a vehicle goes off route.

In addition, GPS information can lead to greater customer satisfaction. Customers know where their products are and when they will arrive. With time, location, vehicle ID, speed and mileage automatically logged, there is little dispute about when a delivery has arrived or left. Automated data of this sort can also be integrated into billing systems for faster invoicing.

Radio frequency identification (RFID) technology. RFID communications can introduce cargo data into the solution. This is a further step to real-time freight tracking and delivery status and reduced inventory losses.

Built-in vehicle diagnostics. Vehicle maintenance schedules can be tracked electronically based on the mileage reported automatically by the vehicle. This means trucks and cars can be scheduled for maintenance in an orderly fashion with technicians able to plan for service rather than react to breakdowns. Accessory diagnostic systems can indicate the status of the trailer, the goods in transport,

Fleet optimization ...

"...addresses both the operational and human aspects of the trucking industry. It empowers drivers and enriches their work environment, resulting in greater job satisfaction, and hence improvement in driver hiring and retention."

–Frost and Sullivan

and the condition of the door locks, windows, lights and refrigeration. For efficiency and safety, diagnostics can also monitor how the vehicle is being driven. Insurance companies can provide discounts if theft prevention and stolen vehicle recovery systems are part of the fleet.

Automatically generated driver logs and fuel tax reporting. Information that drivers traditionally had to record manually can be automated for greater accuracy and faster processing times.

Communication options. In addition to data-only options, the solution can also include facilities for voice, text to speech and voice recognition over cellular connections. A wide variety of wireless technology integrations – 802.11, handheld terminals, cameras, laptops, magnetic stripe readers and signature capture applications – can also be integrated into the solution.

IBM fleet optimization solutions deliver results

- *A power company saves approximately US $1.2 million each year by reducing the amount of repair work.*
- *A leasing company cut administrative costs per vehicle by 35%.*
- *A logistics service provider is able to do more intelligent route planning that trims excess delivery mileage and fuel costs.*
- *In a large metropolitan area, IBM Global Technology Services (GTS) enabled a fleet of some 70 city busses to communicate wirelessly for a video surveillance application.*
- *A Middle Eastern country has rolled out a fleet optimization solution for concrete delivery trucks and leased cars.*
- *A moving company introduced wireless systems to link retailers and manufacturers with drivers and consumers; handheld devices to synchronize warehouse workers with home consumers; and route optimization software to design and implement up-to-the-minute logistics for optimal loading and deliveries. The results: A 75% drop in customer-care costs with additional profit growth from increased sales.*

Software components

The IBM Fleet Optimization Solution architecture is based on a Service-Oriented Architecture (SOA) that provides flexibility, extensibility and scalability to maximize business value. A SOA does this by grouping logically-related technology components, supporting evolving standards like ISO, and insulating layers of technology advancements through loose coupling and flexible, clean interfaces among modules. Benefits like platform independence and vendor/technology agnostic design greatly reduce risk for the customers.

Two approaches

Standard Fleet Optimization

A standard fleet optimization solution can be implemented quickly. Working with carefully selected technology partners, leaders in their markets, IBM will review various approaches to determine the best fit for your company's needs.

Fleet optimization scenarios, return on investment, and benefits

Business scenarios	Key ROI* benefits	Benefits
Knowing vehicle locations at all times	Awareness, improved customer service	-Accuracy of records improved -Better workload management -Provides up-to-the-minute status -Eliminates calling drivers for their locations -Allows dispatcher to predict when a vehicle will be at a customer's stop -Less time wasted checking each vehicle -Shorter downtime -Less time spent on paperwork -Eliminates re-keying of information -Avoids traffic delays and reduces distances traveled -Minimizes billing disputes -Reduces queries from customers -Increases customer referrals -Fewer service emergencies -Improved driver satisfaction -Fewer vehicles and cargoes stolen -Reduced insurance rates -Less cargo spoilage and loss -Trailer losses minimized -Verify time cards against vehicle trip records -Resolve disputes and claims against trucks, driving records
Reduced maintenance costs	5% reduction in costs, less unexpected downtime	
Reduced fuel consumption	14% reduction in consumption savings (based on customer reports that an average of 2.2 hours in a 10 hour shift was idling)	
Better driver productivity	30% increase in productivity; drop times reduced from 40 to 25 minutes	
Improved customer satisfaction with on-time arrivals	94% reduction in customer queries	
Enhanced driver safety	High priority, improved employee satisfaction	
Mitigate risks that reduce insurance costs	Reduction or no shrinkage; reduced fraud; lower premiums based on driving behavior	
Loss prevention and recovery of missing assets, both vehicle and cargo	5 to 20% reduction on premiums	
Monitoring cargo condition	10% loss reduction; 10% spoilage reduction	
Tracking the location of the trailer	Minimize loss of trailers	

* ROI based on a compilation of fleet management testimonials, research reports, white papers, and product literature.

The standard offering includes in-vehicle Global Positioning Device (GPS) selection, communications vendor selection, and a standardized set of fleet optimization reports. For instance, vehicle stop report, trip report, driver log report, fuel tax report, exception and alert reports (i.e., speeding or a predefined boundary violation).

The solution can be pilot-tested on a few vehicles or rolled out to an entire fleet. IBM can provide infrastructure design, servers, software, engineering services, application integration, planning, project management, installation, testing, systems management, hosting and support.

Solutions can be delivered either in an Application Service Provider (ASP) mode, where the data and applications are stored in a secure remote location, or in a server mode, where the applications and data reside on your premises.

Customized Fleet Optimization

When the standard fleet solution does not meet your requirements, IBM can construct a unique solution for your needs. This approach will allow you to customize the elements of the standard offering in a way that addresses the needs of your fleet. This may include items such as more advanced Telematics, customized fleet optimization reports and digital video/image surveillance, just to name a few examples.

Benefits of optimization

An IBM fleet optimization solution can provide the following benefits:

- The ability to better manage fleet assets and organizational workloads
- The opportunity to reduce total fleet size as a result of better planning and scheduling
- Real-time fleet status optimized for scheduling and maintenance
- Improved customer satisfaction with arrival notifications, proof of delivery, and fewer billing disputes
- Elimination of manual processes and greater records accuracy
- Possibility of new service offerings not previously feasible, such as in-transit tracking and projecting arrival time

- Reduced fleet-associated expenses, such as fuel consumption, insurance rates, and vehicle downtime
- Shorten billing cycles using automation to indicate when the delivery or job was completed
- Provides automated verification for fuel purchase, vehicle usage and time sheet records

Choose IBM

IBM has a proven track record in fleet management and optimization. We invest some $5-6 billion annually in research and development, and we are noted for our global reach and innovative solutions. As a well-established player in the industry, we are committed to long-term relationships, and our Partners are the best in the business. IBM Fleet Solutions interface to, and integrate with, enterprise applications using standards-based Service-Oriented Architecture (SOA). An IBM foundation ensures that years from now the solution won't become outdated; the solution can be upgraded rather than replaced.

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